

Proposed, to add a new section 4.5 to DOE O 420.1 Facility Safety, entitled Hazardous Chemical Facility Safety Basis Reports. The new section would be as shown in the following paragraphs. (REV 2, May 20, 1999)

4.5 Hazardous Chemical Facility Safety Basis

DOE Elements shall ensure that a contractor responsible for a DOE hazardous chemical facility shall prepare a Safety Basis Report that establishes the safety basis by which DOE will authorize operations of hazardous chemical facilities. The safety basis will consist of a hazards analysis of the facility, identification of controls necessary for safe operation and prevention and mitigation of potential accidents, and a management of change process to assure the safety basis remains valid. Hazardous chemical facilities are defined as those with chemical inventories of one-tenth or more of the threshold values of 29 CFR 1910.119 or of 40 CFR 68, whichever is smaller (or equivalent hazard level for chemicals not listed in that regulation-to be determined on a case-by-case basis, locally). Mixtures and aqueous solutions shall be treated as in 40 CFR 68, subject to the one-tenth threshold criterion.

4.5.1 Objectives

It is intended that DOE hazardous chemical facilities are designed, constructed, and operated so that the public, workers, and the environment are provided with an adequate level of protection from the hazards of the facilities. In accordance with the core functions of Integrated Safety Management to analyze hazards and establish controls, and consistent with chemical industry best practice, this Section specifies Department of Energy expectations for establishing and maintaining a hazardous chemical facility safety basis. It is expected that the requirements of this Section will be met through application of process safety management in a graded fashion, and through operations of covered facilities in accordance with the established safety basis. Facilities that have hazardous chemical inventories in excess of the threshold quantities specified in 29 CFR 1910.119 or in 40 CFR 68 are required to implement the requirements of those regulations. The hazards analyses required as part of those regulations are sufficient to comply with the hazards analysis requirements of this Section and should be documented in a Safety Basis Report as described in this Section. It is expected that safe operations in facilities having chemical inventories less than those defined for hazardous chemical facilities will be met through appropriate chemical management programs.

4.5.2 Requirements

Contractors shall:

- (1) Establish and document a safety basis for the facility in a Safety Basis Report, including the operations and activities conducted therein, by performing hazards analyses and deriving safety controls to provide an adequate level of safety to the public, workers, and the environment. Safety controls shall specify (i) the protectors, preventors, and mitigators (safety systems) and (ii) management, organization, and institutional safety provisions (including appropriate safety management programs) necessary for safe operations.
- (2) Identify and document safety controls that specify chemical safety requirements relating to the maintenance and operability requirements for safety systems and administrative controls including commitments to the safety management programs identified as necessary for safe operations. These controls shall be based on the hazards analyses.
- (3) Operate the facility and conduct the operations and activities in accordance with the documented and approved Safety Basis Report and controls documented therein.
- (4) Establish and maintain a Management of Change (MOC) process. The MOC process shall identify proposed changes that could (i) increase the likelihood of an accident or the malfunction of safety systems; (ii) increase the consequences of an accident previously evaluated; (iii) create the possibility of an accident or malfunction of a different type than previously evaluated; or (iv) reduce any margin of safety as defined in safety control documents. The process shall also provide for resolution of potential inadequacies which are discovered with respect to the hazards analysis that supports the current safety basis, and for discovery of conditions that render the current safety basis invalid. A hazards analysis of proposed changes or deficiencies in the current safety basis shall be performed to

demonstrate that the change is safe or to correct the deficiency. Safety Basis Report changes should be identified for each proposed change that is adopted and implemented. DOE shall be notified of any changes identified through this process, and such changes shall be part of the safety basis and shall be included in updates to the Safety Basis Report.

4.5.3 Documentation

- (1) Contractors for new operations or activities shall prepare a Safety Basis Report as part of design activities and shall submit the Safety Basis Report, and a description of the Management of Change process to DOE for review and obtain DOE approval of these documents prior to initiation of a new hazardous chemical operation or activity in a new or existing facility.
- (2) For existing operations or activities, Contractors shall establish a schedule in their ISM System Description for compliance to the requirements of this Order.

4.5.4 Approvals

The approval of the documents required by this section shall be the responsibility of the Site DOE Office and shall be based on an affirmative determination that the documents meet the requirements of this Section and provide reasonable assurance of adequate protection of the public, the workers, and the environment.

4.5.5 Updates

The Safety Basis Report shall be reviewed, updated (if necessary) and every five years following the first submittal and approval. Significant changes shall be updated immediately. If no changes are necessary, a letter report certifying this to be the case should be submitted to DOE.